

In the claims:

1. (previously presented) A method of securing communication between at least two members of a group, wherein each member is an autonomous system comprising one or more network devices, the method including the steps of:

for a first communication between a first subset of members,

forwarding, to at least one member of the group, a group security association corresponding to the group;

receiving, from the at least one member of the group, route information enabling communication with each of the one or more network devices of the autonomous system corresponding to the member, the route information identifying a border router that should be used as the next hop to the at least one member of the group;

identifying at least one other member of the group; and

reflecting the route information received from the at least one member of the group to the at least one other member of the group, including the step of securing the route information using the group security association, and

for a second communication between a second subset of members,

securing route information using the same group security association used for the first communication between the first subset of members.

2. (cancelled)
3. (original) The method according to claim 1, further comprising the step of receiving a registration request from the at least one member of the group.
4. (previously presented) The method according to claim 3 wherein the registration request includes a list including the at least one other member of the group.
5. (previously presented) The method according to claim 4, wherein the step of identifying the at least one other member includes the step of forwarding a request for routing information to the at least one other member, the request including an identifier for the group.
6. (original) The method according to claim 4, wherein the step of identifying includes the step of auto-discovering the at least one other member of the group in response to the registration request by issuing a request for routing information to other devices in the network, the request for routing information including an identifier for the group.
7. (currently amended) Apparatus for providing secure communications between at least two members of a group over a backbone network comprising:

a network device including:

security association logic for forwarding a group security association of the group to the at least two members of the group for a first communication between a first subset of members;

route reflection logic for identifying at least one of the at least two members of the group, receiving routing information for the at least one of the two members of the group, the route information identifying a border router that should be used as the next hop to the at least one member of the group, securing the routing information for the at least one of the two members of the group using the group security association and for forwarding the secured routing information to another one of the at least two members of the group; and

the security association logic and router reflection logic performing the same functions for a second communication between a second subset of members, including using the same group security association.

8. (previously presented) The apparatus of claim 7 wherein the logic for identifying at least one of the two members of the group is auto-discovery logic.
9. (previously presented) The apparatus of claim 7 wherein the logic for identifying at least one of the two members of the group includes a list of members of the group.

10. (previously presented) A method for communicating securely by one member of a group of network devices with at least one other member of the group of network devices over a network backbone including the steps of:

for a first communication between a first subset of members,

receiving, at the one member, a group security association corresponding to the group; and

forwarding, by the one member to the at least one other member of the group, routing information for the one member, the route information identifying a border router that should be used as the next hop to the one member of the group, the routing information being secured using the group security association of the group, and

for a second communication between a second subset of members,

the one member using the same group security association used for the first communication between the first subset of members.

11. (previously presented) The method of claim 10 further including the steps of:

receiving, at the one member, routing information associated with the at least one other member of the group, wherein the routing information associated with the at least one other member of the group is secured using the group security association of the group.

12. (previously presented) The method of claim 11 further comprising the steps of:
- restoring the routing information associated with the at least one other member of the group using the group security association of the group;
  - securing a packet for transmission to the at least one other member of the group using the group security association to provide a secured packet; and
  - forwarding the secured packet to the at least one other member using the restored routing information.
13. (previously presented) The method of claim 12 wherein the step of forwarding includes building a tunnel to the at least one other member of the group using the restored routing information and the group security association.
14. (cancelled)
15. (cancelled)
16. (cancelled)
17. (cancelled)